

1                   3.       (AMENDED) The substrate processing system of claim [1] 11 further  
2 comprising a computer processor communicatively coupled to said impedance monitor so that  
3 said computer processor receives as an input the measured impedance level of said plasma.

1                   4.       (UNCHANGED) The substrate processing system of claim 3 further  
2 comprising a variable capacitor electrically coupled to said chamber and controllably coupled  
3 to said processor wherein said processor adjusts a capacitance level of said variable capacitor  
4 to vary the impedance of said plasma in response to an output of said impedance monitor.

1                   5.       (UNCHANGED) The substrate processing system of claim 3 further  
2 comprising a pressure control system configured to control a pressure level within said  
3 chamber and controllably coupled to said processor wherein said processor controls said  
4 pressure control system to vary the pressure within the chamber in response to the measured  
5 impedance level of said plasma.

1                   6.       (UNCHANGED) The substrate processing system of claim 3 wherein  
2 said processor controls said plasma power source to vary the power applied to the plasma in  
3 response to the measured impedance level of said plasma.

7.       RESTRICTION REQUIREMENT.

8.       RESTRICTION REQUIREMENT.

9.       RESTRICTION REQUIREMENT.

10.      RESTRICTION REQUIREMENT.

1                   11.      (UNCHANGED) A substrate processing system comprising:  
2 a deposition chamber comprising a reaction zone;  
3 a substrate holder that positions a substrate in the reaction zone;  
4 said substrate holder comprising a low frequency (LF) electrode;  
5 a gas distribution system that includes a gas inlet manifold for supplying one or  
6 more process gases to said reaction zone;  
7 said gas inlet manifold comprising a high frequency (HF) electrode;

8 a plasma power source for forming a plasma within the reaction zone of said  
9 deposition chamber; and  
10 an impedance monitor electrically coupled to said high frequency electrode and  
11 said low frequency electrode.

1 12. (UNCHANGED) The substrate processing system of claim 11 further  
2 comprising a variable capacitor electrically coupled to said LF electrode and controllably  
3 coupled to said processor wherein said processor adjusts a capacitance level of said variable  
4 capacitor to vary the impedance of said plasma in response to an output of said impedance  
5 monitor.

1 13. (AMENDED) The substrate processing system of claim 11 further  
2 comprising **[a variable capacitor]** an impedance tuner coupled in series to said pedestal.

1 14. (AMENDED) The substrate processing system of claim 13 wherein said  
2 **[variable capacitor]** impedance tuner is coupled between said pedestal and a low frequency  
3 RF generator.

1 15. CANCEL

1 16. (AMENDED) The substrate processing system of claim **[14]** 4 further  
2 comprising a matching network coupled to a high frequency RF generator and said gas  
3 manifold, wherein said matching network has capacitors that are different than said variable  
4 capacitor.

1 17. (UNCHANGED) A substrate processing system comprising:  
2 means for introducing one or more process gases into a reaction zone of a  
3 substrate processing chamber;  
4 means for forming a plasma from said one or more process gases;  
5 means for maintaining the reaction zone at deposition conditions suitable to  
6 deposit a layer from said one or more process gases;  
7 means for monitoring an impedance level of said plasma; and

8 means for adjusting deposition conditions in the reaction zone in response to  
9 said impedance level.

1 18. (AMENDED) A **[means for depositing a film]** substrate processing  
2 system as set forth in claim 17 wherein said means for adjusting deposition conditions  
3 comprises a variable capacitor electrically coupled to said processing chamber.--

Please add the following new claims:

1 --19. (NEW) The substrate processing system of claim 12, wherein said  
2 impedance tuner includes a variable capacitor.

1 20. (NEW) The substrate processing system of claim 19 further comprising  
2 a matching network coupled between said low frequency RF generator and said variable  
3 capacitor, wherein said matching network includes capacitors that are different than said  
4 variable capacitor.

1 21. (NEW) The substrate processing system of claim 11, further comprising  
2 a high frequency power supply coupled to said high frequency electrode and a low frequency  
3 power supply coupled to said low frequency electrode.--